

### **REMARKS**

The Office Action dated February 18, 2009, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

By this Response, claims 15, 32, 37, 41-42, and 60-62 have been amended to more particularly point and distinctly claim the subject matter of the present invention. No new matter has been added. Claims 1-15, 32, 37, and 40-62 are pending in the application, of which claims 1, 15, 32, 37, 40-42, and 60-62 are independent claims.

In view of the above amendments and the following remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending rejections to the claims for the reasons discussed below.

#### ***Allowable Subject Matter***

Claims 5, 46, and 56 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant thanks the Examiner for this indication of allowable subject matter. Applicant respectfully submits that the claims from which claims 5, 46, and 56 depend are also allowable, as discussed below. Thus, it is respectfully requested that the objection to claims 5, 46, and 56 be withdrawn.

Reconsideration and allowance of claims 5, 46, and 56 are, therefore, respectfully submitted.

### ***Claim Objection***

Claims 37, 41-42, 60, and 62 were objected to because of alleged informalities. Applicant has amended claims 37, 41-42, 60, and 62, as suggested by the Examiner. Accordingly, Applicant respectfully submits that this objection is moot in view of the claim amendments, and respectfully requests that this objection be withdrawn.

Reconsideration and allowance of claims 37, 41-42, 60, and 62 are, thus, respectfully submitted.

### ***Claim Rejection - 35 U.S.C. 112***

Claim 41-42 was rejected under 35 U.S.C. 112, second paragraph, as allegedly including insufficient antecedent basis for limitations in the claims. Applicant has amended claims 41-42, as suggested by the Examiner. Accordingly, Applicant respectfully submits that this rejection is moot in view of the claim amendments, and respectfully requests that this rejection be withdrawn.

Reconsideration and allowance of claims 41-42 are, thus, respectfully submitted.

### ***Claim Rejection - 35 U.S.C. 101***

Method claims 15, 32, and 42 were rejected under 35 U.S.C. 101 because the claimed invention is allegedly directed to non-statutory subject matter. Specifically, the Office Action stated, "Although various elements of a network are cited as passive participants or respondents, there is not mentioning of an active system/apparatus that

performs the steps recited in the claims” (see Office Action at page 4). *In re Bilski* held that a “claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus or (2) it transforms a particular article into a different state or thing” (see Slip Op. at pages 10-11 (Fed. Cir. 2008)). Applicant has amended method claims 15, 32, and 42 to explicitly tie each step of the method claims to particular machines, in particular, a “core network node” or a “controller.” Accordingly, Applicant respectfully submits that this rejection is moot in view of the claim amendments, and respectfully requests that this rejection be withdrawn.

Reconsideration and allowance of claims 15, 32, and 42 are, thus, respectfully submitted.

### ***Claim Rejections - 35 U.S.C. 103***

Claims 1-2, 9-15, 32, 37, 40-43, 50-53, and 60-62 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent Appln. Pub. No. 2003/0137948 of Komandur et al. (“Komandur”) in view of U.S. Patent No. 6,580,699 of Manning et al. (“Manning”). The Office Action acknowledged that Komandur fails to disclose or suggest all of the features of claims 1-2, 9-15, 32, 37, 40-43, 50-53, and 60-62, and cited Manning to remedy the deficiencies of Komandur with respect to these rejected claims. Applicant respectfully submits that each of claims 1-2, 9-15, 32, 37, 40-43, 50-53, and 60-62 recites subject matter that is neither disclose nor suggested in the combination of Komandur and Manning.

Independent claim 1, upon which claims 2-14 depend, is directed to a system including at least one access network configured to provide a wireless interface between a mobile device and the at least one access network for communication of packet data. The system also includes a core network including at least one core network node configured to support communication of packet data on the wireless interface and configured to release a data communication link associated with the mobile device in the absence of a response to one or more messages directed to the mobile device. The system further includes a controller provided in association with the at least one access network and configured to monitor at least one condition associated with the wireless interface, and, when the monitoring indicates that the at least one condition is met, to generate and send to the core network node one or more messages in response to one or more of the one or more messages from the core network node.

Independent claim 15 is directed to a method including establishing, by a core network node, a data communication link via an access network of a data communication system to a mobile device on a wireless interface between the access network and the mobile device. The method also includes sending one or more messages from the core network node of the data communication system to the mobile device via the access network. The core network is configured to release the data communication link in the absence of a response to the one or more messages. The method further includes detecting at a controller provided in association with the access network that at least one trigger condition associated with the wireless interface is met. The method additionally

includes subsequent to the detecting, generating at the controller and sending to the core network node one or more messages in response to the one or more messages from the core network node.

Independent claim 32 is directed to a method including detecting at a controller provided in association with an access network of a data communication system that a mobile device is out of reach. A data communication link is established via the access network to the mobile device on a wireless interface between the access network and the mobile device. A core network node of the data communication system is configured to send one or more messages to the mobile device via the access network. The core network node is configured to release the data communication link in the absence of a response to the one or more messages. The method also includes notifying, by the controller, the core network node that the mobile device is out of reach. In response to receiving the notification, the core network node is configured to retain the data communication link, to pause from sending further data packets from the core network node to the mobile device, and to process the data packets in accordance with a predefined policy.

Independent claim 37 is directed to a system including establishing means for establishing a data communication link via an access network of the data communication system to a mobile device on a wireless interface between the access network and the mobile device. The system also includes first sending means for sending one or more messages from a core network node of the data communication system to the mobile

device via the access network. The core network node is configured to release the data communication link in the absence of a reply to the one or more messages. The system further includes detection means for detection at a controller provided in association with the access network that at least one trigger condition associated with the wireless interface is met. The system additionally includes second sending means for sending a further message from the controller to the core network node subsequent to such detection. The core network node postpones the release of the data communication link in response to the further message.

Independent claim 40 is directed to a system including an establishing unit configured to establish a data communication link via an access network of the data communication system to a mobile device on a wireless interface between the access network and the mobile device. The system also includes a first sending unit configured to send one or messages from a core network node of the data communication system to the mobile device via the access network. The core network node is configured to release the data communication link in the absence of a reply to the one or more messages. The system further includes a detector configured to detect at a controller provided in association with the access network that at least one trigger condition associated with the wireless interface is met. The system additionally includes a second sending unit configured to send a further message from the controller to the core network node subsequent to such detection. The core network node postpones the release of the release link in response to such a further message.

Independent claim 41, upon which claims 43-52 depend, is directed to an apparatus including a processor configured to monitor at least one condition associated with a wireless interface. The apparatus is associated with at least one access network via which a data communication link is established between a mobile device and a core network node configured to release the data communication link in the absence of a response to one or more messages directed to the mobile device. The apparatus also includes a transmitter configured to, in response to an indication that the at least one condition is not met, generate on behalf of the mobile device and transmit to the core network node one or more messages in response to the one or more messages from the core network node, or configured to, in response to an indication that the at least one condition is not met, generate and transmit to the core network node a message, in response to which the core network node postpones release of the data communication link.

Independent claim 42, upon which claims 53-59 depend, is directed to a method including monitoring, by a controller, at least one condition associated with a wireless interface constituting part of a data communication link between a mobile device and a core network node configured to release the data communication link in the absence of a response to one or more messages directed to the mobile device. The method also includes in response to an indication that the at least one condition is met, either generating, by the controller, on behalf of the mobile device and sending to the core network node one or more messages in response to the one or more messages from the

core network node. Otherwise, the method further includes sending, by the controller, a message to the core network node in response to which the core network node postpones release of the data communication link.

Independent claim 60 is directed to a computer program embodied on a computer readable medium, the computer program being configured to control a processor to perform establishing a data communication link via an access network of a data communication system to a mobile device on a wireless interface between the access network and the mobile device. The processor also performs sending one or more messages from a core network node of the data communication system to the mobile device via the access network. The core network is configured to release the data communication link in the absence of a response to the one or more messages. The processor further performs detecting at a controller provided in association with the access network that at least one trigger condition associated with the wireless interface is met. The processor additionally performs subsequent to the detecting, generating at the controller and sending to the core network node one or more messages in response to the one or more messages from the core network node.

Independent claim 61 is directed to a computer program embodied on a computer readable medium, the computer program being configured to control a processor to perform detecting at a controller provided in association with an access network of a data communication system that a mobile device is out of reach. A data communication link is established via the access network to the mobile device on a wireless interface between



the access network and the mobile device. A core network node of the data communication system is configured to send one or more messages to the mobile device via the access network. The core network node is configured to release the data communication link in the absence of a response to the one or more messages. The processor also performs notifying the core network node that the mobile device is out of reach. In response to receiving the notification, the core network node is configured to retain the data communication link, to pause from sending further data packets from the core network node to the mobile device, and to process the data packets in accordance with a predefined policy.

Independent claim 62 is directed to a computer program embodied on a computer readable medium, the computer program being configured to control a processor to perform monitoring at least one condition associated with a wireless interface constituting part of a data communication link between a mobile device and a core network node configured to release the data communication link in the absence of a response to one or more messages directed to the mobile device. The processor also performs in response to an indication that the at least one condition is met, either generating on behalf of the mobile device and sending to the core network node one or more messages in response to the one or more messages from the core network node. Otherwise, the processor further performs sending a message to the core network node in response to which the core network node postpones release of the data communication link.

Applicant respectfully submits that the combination of Komandur and Manning fails to disclose or suggest all of the features of any of the presently pending claims.

Komandur describes a system, method, and apparatus for transmitting packet data over a wireless network to a mobile station. Packet data are received at a wireless content switch that is part of the wireless data network. The wireless content switch is equipped to detect lost packets, lost acknowledgments, and take appropriate remedial action, without invoking the congestion control and avoidance mechanisms of the transmission control protocol (*see* Komandur at Abstract).

Manning describes a system and method for timely maintaining or establishing an R-P connection after a mobile station (MS) roams from the control of an old base station controller (BSC) to that of a new BSC. The process may be initiated during a registration process of the MS, during an origination process, or during a termination process. A Mobile Service Center (MSC), Visitor's Location Register (VLR), or the MS may be used to store the packet data call status information including point to point protocol (PPP) session status information and configuration information about an old BSC including its related cells and PDSNs. In some cases, this information may also be transferred to the new BSC through a BSC to BSC connection (*see* Manning at Abstract).

Applicant respectfully submits that the combination of Komandur and Manning fails to disclose or suggest all of the features of any of the presently pending claims. Specifically, the combination of Komandur and Manning does not disclose or suggest, at least, "at least one core network node ... configured to release a data communication link

associated with the mobile device in the absence of a response to one or more messages directed to the mobile device,” as recited in independent claim 1 and similarly recited in the other independent claims. The Office Action acknowledged that Komandur fails to disclose or suggest these features, but cited Manning to remedy the deficiencies of Komandur with respect to these features. In particular, the Office Action asserted that these features are disclosed by Manning at column 4, lines 30-54. In the cited portion, Manning refers to a new base station controller (BS-N) that detects the absence of an existing connection between the BS-N and a packet data session node (PDSN), and that sends a Connection Request message to the PDSN. The PDSN then sets up a new connection with the BS-N, and once the new connection is completed, the PDSN sends a Connection Release message to an old base station controller (BS-O) to release an old connection between the BS-O and the PDSN. The PDSN receives a confirmation from the BS-O. The Office Action asserted that the PDSN of Manning corresponds to the core network node of the claimed invention (*see* Office Action at page 5, line 24, to page 6, line 1).

However, Manning does not disclose or suggest that the PDSN is configured to release a data communication link associated with a mobile device in the absence of a response to one or more messages directed to the mobile device. Accordingly, Manning fails to disclose or suggest, at least, “at least one core network node ... configured to release a data communication link associated with the mobile device in the absence of a response to one or more messages directed to the mobile device,” as recited in

independent claim 1 and similarly recited in the other independent claims. In contrast, as discussed above, Manning refers to the PDSN releasing its old connection associated with the BS-O, which is not mobile and, thus, cannot correspond to the mobile device of the claimed invention.

Furthermore, even if the BS-O of Manning corresponds to the mobile device of the claimed invention (which it cannot), the PDSN of Manning does not release its old connection associated with the BS-O in the absence of a response to one or more messages directed to the BS-O. Instead, the PDSN of Manning releases its old connection associated with the BS-O in response to the new connection between the PDSN and the BS-N being completed, or at most, in the absence of an existing connection between the PDSN and the BS-N, as mentioned above. In fact, Manning teaches away from the claimed invention since the PDSN of Manning releases its old connection associated with the BS-O even though the PDSN receives a response to the Connection Release message directed to the BS-O (*i.e.*, the confirmation). Accordingly, the combination of Komandur and Manning fails to disclose or suggest, at least, “at least one core network node ... configured to release a data communication link associated with the mobile device in the absence of a response to one or more messages directed to the mobile device,” as recited in independent claim 1 and similarly recited in the other independent claims.

In addition, the combination of Komandur and Manning does not disclose or suggest, at least, “notifying, by the controller, said core network node that the mobile

device is out of reach, wherein in response to receiving the notification, the core network node is configured to retain said data communication link,” as recited in independent claim 32 and similarly recited in independent claims 37, 40-42, and 61-62. The Office Action asserted that these features are disclosed by Komandur at paragraphs 45 and 49. In the cited portion, Komandur refers to a wireless content switch that stores a data packet prior to transmission to a mobile station, if the mobile station becomes unreachable, and that delays retransmission of the data packet until the reachability of the mobile station is determined. The wireless content switch also examines wireless radio link conditions and determines whether the radio link is down, and when the radio link is down, the received data packet is blocked.

However, Komandur fails to disclose or suggest that in response to receiving notification that the mobile station is out of reach, the wireless content switch retains the wireless radio link. Accordingly, Komandur does not disclose or suggest, at least, “notifying, by the controller, said core network node that the mobile device is out of reach, wherein in response to receiving the notification, the core network node is configured to retain said data communication link,” as recited in independent claim 32 and similarly recited in independent claims 37, 40-42, and 61-62. Specifically, Komandur fails to disclose or suggest that the wireless content switch retains the wireless radio link. In contrast, as discussed above, Komandur refers to the wireless content switch only storing a data packet, delaying retransmission of the data packet, examining the radio link conditions, and determining whether the radio link is down.

Manning does not cure these deficiencies of Komandur. Manning refers to a the old and the new connections between the PSDN and the BS-O and the BS-N, respectively, as discussed above. However, Manning fails to disclose or suggest that the PSDN retains such connections in response to receiving notification that a mobile device is out of reach. Accordingly, the combination of Komandur and Manning does not disclose or suggest, at least, “notifying, by the controller, said core network node that the mobile device is out of reach, wherein in response to receiving the notification, the core network node is configured to retain said data communication link,” as recited in independent claim 32 and similarly recited in independent claims 37, 40-42, and 61-62.

For at least the reasons discussed above, Applicant respectfully submits that the combination of Komandur and Manning fails to disclose or suggest all of the elements of independent claims 1, 15, 32, 37, 40-42, and 60-62. Accordingly, Applicant respectfully requests that the rejection of independent claims 1, 15, 32, 37, 40-42, and 60-62 be withdrawn.

Claims 2, 9-14, 43, and 50-53 depend from, and further limit, independent claims 1 and 41-42. Thus, each of claims 2, 9-14, 43, and 50-53 recites subject matter that is neither disclosed nor suggested in the combination of Komandur and Manning. Accordingly, Applicant respectfully requests that the rejection of claims 2, 9-14, 43, and 50-53 be withdrawn.

Claims 3, 8, 44, 49, 54, and 59 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Komandur in view of Manning and further in view of U.S.

Patent No. 6,041,235 of Aalto ("Aalto"). The Office Action acknowledged that the combination of Komandur and Manning fails to disclose or suggest all of the features of claims 3, 8, 44, 49, 54, and 59, and cited Aalto to remedy the deficiencies of the combination of Komandur and Manning with respect to these rejected claims. Applicant respectfully submits that each of claims 3, 8, 44, 49, 54, and 59 recites subject matter that is neither disclosed nor suggested in the combination of Komandur, Manning, and Aalto.

In order for this rejection to be sustainable, the combination of Komandur, Manning, and Aalto must teach all the recitations of independent claims 1 and 41-42. Accordingly, the arguments presented above supporting the patentability of independent claims 1 and 41-42 over the combination of Komandur and Manning are incorporated herein to support the patentability of claims 3, 8, 44, 49, 54, and 59. Therefore, it is respectfully requested that claims 3, 8, 44, 49, 54, and 59 be allowed. Aalto fails to cure the deficiencies of the combination of Komandur and Manning.

Aalto describes a handover method and arrangement in which a mobile station measures the reception level and the quality of the signal in the serving cell as well as the level of the signal of adjacent cells. The mobile station transmits the measurement results to a fixed network, which determines the need for handover, and, with the aid of the measurement results, selects at least one adjacent cell as a candidate cell for handover (*see Aalto at Abstract*).

However, Aalto fails to cure the deficiencies of the combination of Komandur and Manning. Similarly to the combination of Komandur and Manning, Aalto fails to

disclose or suggest, at least, “at least one core network node ... configured to release a data communication link associated with the mobile device in the absence of a response to one or more messages directed to the mobile device,” as recited in independent claim 1 and similarly recited in the other independent claims. Aalto is silent as to teaching the particular features associated with the core network node of independent claims 1 and 41-42.

Therefore, the combination of Komandur, Manning, and Aalto would not lead a person of ordinary skill in the art to arrive at the features of the core network node as recited in independent claims 1 and 41-42. Consequently, Applicant respectfully submits that independent claims 1 and 41-42 and their dependent claims 3, 8, 44, 49, 54, and 59 are not obvious over the combination of Komandur, Manning, and Aalto. Accordingly, Applicant respectfully requests that the rejection of claims 3, 8, 44, 49, 54, and 59 be withdrawn.

Claims 6, 47, and 57 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Komandur in view of Manning and Aalto and further in view of U.S. Patent No. 6,792,278 of Ahmavaara et al. (“Ahmavaara”). Claims 4, 45, and 55 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Komandur in view of Manning, Aalto, and Ahmavaara and further in view of U.S. Patent No. 7,154,903 of Sivalingham (“Sivalingham”). Claims 7, 48, and 58 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Komandur in view of Manning, Aalto, Ahmavaara, and Sivalingham and further in view of U.S. Patent Appln. Pub. No.



2002/0057658 of Lim ("Lim"). Applicant respectfully submits that these rejections are legally improper.

Ahmavaara cannot be cited against the present application to show obviousness. Ahmavaara was issued and published on September 14, 2004, which is after the filing date of the present application, of July 24, 2003. Since the present application antedates Ahmavaara's publication, the only possible section of 35 U.S.C. 102 under which Ahmavaara could be applicable as prior art for obviousness is 35 U.S.C. 102(e). However, 35 U.S.C. 103(c) prohibits the USPTO from citing (for the purposes of establishing obviousness) a reference that is only available as prior art via 35 U.S.C. 102(e), and which was under a mutual obligation of assignment to the same entity at the time the invention was made. Ahmavaara was either already assigned to or under an obligation of assignment to Nokia Corporation at the time the invention was made, as evidenced by the assignment recorded at Reel 011355, Frame 0475, on November 27, 2000. The assignment of the present application to Nokia Corporation was recorded at Reel 014866, Frame 0007, on January 5, 2004.

Thus, as demonstrated above, Ahmavaara cannot be used to show obviousness of the claims of the present application. Accordingly, Applicant respectfully submits that these rejections are clearly improper, and respectfully requests that these rejections be withdrawn.

Reconsideration and allowance of claims 1-4, 6-15, 32, 37, 40-45, 47-55, and 57-62 are, thus, respectfully submitted.

### ***Conclusion***

For at least the reasons discussed above, Applicant respectfully submits that the cited references fail to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is thus respectfully requested that all of claims 1-15, 32, 37, and 40-62 be allowed, and that this application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, Applicant's undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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